

REMARKS/ARGUMENTS

Reconsideration of this application is requested. Claims 7-12 will be active in the application subsequent to entry of this Amendment.

Before addressing the issues raised in the outstanding Official Action, counsel wishes to direct the examiner's attention to two important filings. An Information Disclosure Statement (IDS) was filed on May 16, 2003 (citing a single literature article reference) which was just prior to the mailing date of the Official Action. Subsequent to the mailing date of the Official Action - but within the three month period for doing so - a supplemental European Search Report was issued and an IDS regarding that Report was filed on August 12, 2003. Counsel requests the examiner to take both of these filings into account during further examination of this application. If for any reason the relevant documents or documentation are not in the examiner's hands, please contact the undersigned.

Discussion of amendments to the claims

The Official Action raises two rejections, both based upon prior art. Applicants have carefully considered the examiner's position and revised their claims in order to more particularly point out and distinctly claim that which they regard as their invention. Previous claims 1-6 have been substantially reworded and, for convenience, are presented as new claims 7-12, respectively. Important features disclosed in the as-filed specification have been incorporated into the new claims presented above. Support for these amendments appears as follows:

Page 13, lines 18 and 19: "In contrast, this invention can be applied to reuse of a pre-cooked cheese as in the prior art." (emphasis added)

Page 2, lines 12 to 16: "In this invention, cheese-like food refers to [a] processed cheese and [a] cheese food."

Page 3, lines 26 to 28: "As described above, since the cheese-like food which is once (previously) processed by the emulsification treatment, such as the processed cheese, (hereinafter, described as a "processed cheese-like food"),".

Page 3, lines 3 to 6: "As a general characteristic of the cheese-like food, it is known that the viscosity of melted cheese-like food is increased when the cheese-like food is treated by the emulsification treatment again after being added into another cheese-like food."

Applicants have amended their claims to clarify the scope of the claimed invention, thus both of the rejections are believed to be overcome. The practice of the present invention after the above amendments is characterized by the following:

- i) A procedure for providing a raw material to be reused for a process cheese or a cheese food;
- ii) Subjecting a "processed cheese or cheese food which has been previously treated by an emulsification treatment" to a heating and melting treatment to provide a raw material to be reused;
- iii) Even if "a processed cheese or cheese food which has been previously treated by an emulsification treatment" is used as one of the raw materials to prepare another processed cheese or cheese food, it produces no substantial viscosity increase in the course of an emulsifying treatment in a later step and makes it possible to produce another processed cheese or cheese food in a convenient procedure, e.g., no need to change temperature conditions in the processing.

Applicants also specify the "food material" to be a raw material to be reused for a processed cheese or a cheese food – and thus clarified the scope of the present invention.

In addition, the present invention is characterized by reusing a "processed cheese or cheese food which has been treated once by an emulsification treatment". The "processed cheese or cheese food which has been treated once by an emulsification treatment" has a history having been subjected to at least one heating and an emulsifying

treatment. This is described on page 6, lines 6 to 9, of the specification "Since the ... at least one time,".

Applicants' contribution to the art

According to conventional procedures, when a processed cheese or cheese food is produced, natural cheese is used as a raw material. Such a natural cheese is one that has not been subjected to an emulsifying treatment.

The reason natural cheese is used according to conventional practice is that when a processed cheese or cheese food which has been previously treated by an emulsification treatment is used as a raw material, the following restrictions existed.

Conventionally, as is described in the specification, page 3, lines 10 to 30 (For one thing ... specifically the cheese-like food.), if the processed cheese or cheese food which has been previously treated by an emulsification treatment, as it is, is used as a material for another processed cheese or cheese food and is mixed with other materials, the viscosity of the mixture increases during the subsequent emulsifying treatment steps.

A typical raw material which displays this phenomenon of viscosity increase is a pre-cooked cheese. A pre-cooked cheese, as described in page 4, lines 6 to 8 (in which a pre-cooked cheese ... or the like), is obtained from cheese remaining in a manufacturing line and/or defective cheese having a defective (unsuitable) shape, wrapping, content, or the like. Such a pre-cooked cheese is formed at the final step of the manufacturing procedure, hence it is one that is already heated at least once and is included in the "processed cheese or cheese food which has been treated once by an emulsification treatment" in the present invention.

For example, when a manufacturing line for a process cheese is operated and a processed cheese is manufactured, and an already recovered cheese is reused and mixed as a raw material together with other raw materials, these raw materials cause a viscosity increase at the emulsification step, thus making it impossible to stably produce a processed cheese.

As stated above, the present invention solves these problems. That is to say, the present inventors discovered that if the "processed cheese or cheese food which has been previously treated by an emulsification treatment" is subjected to a heating and melting treatment at a temperature equal to or higher than 120°C, a raw material having a different property than the conventional processed cheese results. And this raw material, when used by mixing with other raw materials to prepare other processed cheeses or cheese foods, does not cause a viscosity increase during an emulsification treatment.

For example, if a pre-cooked cheese is recovered and is subjected to a heating and melting treatment at a temperature of 120°C or higher, it then becomes possible to reuse it as a raw material for another processed cheese. This effect is described in the specification of the present application, page 31, line 12 to the bottom line, and also page 11, lines 20 to 24, and page 13, lines 16 to 22.

Attention should be paid to the fact that the step characteristic of the present invention of subjecting the "processed cheese or cheese food which has been previously treated by an emulsification treatment" to a heating and melting treatment at a temperature of at least 120°C or higher is a step distinct from an emulsifying treatment carried out for producing a usual processed cheese.

For example, evaluating the total number of heating operations, the present invention uses a processed cheese or cheese food which has been previously treated by an emulsification treatment as a starting material, which has already experienced at least one heating operation, i.e., an emulsification treatment. This is because, as stated above, the "processed cheese or cheese food which has been previously treated by an emulsification treatment" is one that has been subjected to at least one heating and emulsifying treatment. Examples thereof include processed cheese, pre-cooked cheese, etc., which are obtained by subjecting a natural cheese to an emulsifying treatment.

In the present invention, the "processed cheese or cheese food which has been previously treated by an emulsification treatment" is subjected to at least one heating and melting treatment at a temperature at least 120°C and is rendered reusable. Thus, in the

present invention, in total, heating operations are carried out at least two times. Carrying out the last heating operation of the two heating operations, the previously processed cheese or cheese food is transformed into a raw material which scarcely displays a viscosity increase.

In the present invention, the resulting raw material processed cheese or cheese food, which has been treated by an emulsification treatment, i.e., two heating and melting treatments, is mixed with other raw materials to produce another processed cheese or cheese food, and the mixture after mixing is subjected to an emulsifying treatment, as in the usual production procedure for a processed cheese or cheese food. In this case, a total of three heating operations are carried out.

Eventually, the first starting material of "processed cheese or cheese food which has been previously treated by an emulsification treatment" has already experienced a first heating operation, i.e., an emulsification treatment, and in the prevent invention, the "processed cheese or cheese food" is subjected to a second heating operation, i.e., a heating and melting treatment (the second heating operation is a characteristic of the present invention). The second heating operation provides a raw material to be reused for a processed cheese or cheese food as recited in claim 7, which raw material provides an effect of scarcely increasing the viscosity in the third heating operation (emulsification treatment) after mixing together with other raw materials for another processed cheese or cheese food.

That is to say, the second heating operation (heating and melting operation) is essentially different from the first heating operation (an emulsification treatment) and the third heating operation (an emulsification treatment), and is an important procedure for the present invention.

Response to art-based rejections

In the Official Action claims 1, 2 and 5 are rejected under 35 USC 102(b) as being anticipated by JP9154485, JP9103242, or JP58198248, while claims 3, 4, and 6 are rejected under 35 USC 103(a) as being unpatentable over JP9154485 or JP9103242. To

the extent the examiner's concerns may extend to the new claims presented above, these rejections are traversed.

JP9154485 discloses a process for producing a low fat process-cheese, comprising heating and melting a raw material containing a meltable salt and O/W type emulsifier. JP9103242 discloses a production method of process cheeses comprising heating and melting a raw material containing a meltable salt and an emulsifier at 75°C and cooling the material.

However, the disclosures of JP9154485 and JP9103242, except for characteristic features such as kind of emulsifiers, fat content of final products, cooling conditions, etc., only specific simple production methods of process cheeses. That is to say, JP9154485 and JP9103242 only disclose a general procedure for preparing a process cheese comprising using a natural cheese, which is a cheese having no experience of an emulsification treatment, adding supplementary raw materials such as an emulsifier thereto, and subjecting it to an emulsification treatment to obtain process cheese.

In contrast, the present invention is a technique for the reuse of a "processed cheese or cheese food which has been previously treated by an emulsification treatment". This technical idea of the present invention is completely different from those of JP9154485 and JP9103242.

Both JP9154485 and JP9103242 use a natural cheese which has no experience of an emulsification treatment as a starting material and produce a process cheese. In contrast, the present invention uses processed cheese or a cheese food which has been previously treated by an emulsification treatment, as a starting material, subjecting it to a heating and melting treatment, thereby providing a raw material to be reused by mixing for another processed cheese or cheese food, which is entirely different from JP9154485 and JP9103242.

In addition, if the processed cheese which is produced by the method of JP9154485 or JP9103242 is subjected to the procedure of the present invention, it may be used as a raw material and reused for another processed cheese or cheese food.

In conclusion, JP 9154485 and JP9103242 neither disclose nor suggest the characteristics of the present invention, that is:

- i) A procedure for providing a raw material to be reused for a process cheese or a cheese food;
- ii) Subjecting a "processed cheese or cheese food which has been previously treated by an emulsification treatment" to a heating and melting treatment to provide a raw material to be reused;
- iii) Even if "a processed cheese or cheese food which has been previously treated by an emulsification treatment" is used as one of the raw materials to prepare another processed cheese or cheese food, it produces no substantial viscosity increase in the course of an emulsifying treatment in a later step and makes it possible to produce another processed cheese or cheese food in a convenient procedure, e.g., no need to change temperature conditions in the processing.

JP58198248 discloses a method for producing a cheese cake. JP58198248 does not disclose the technical issue of reusing the "processed cheese or cheese food which has been previously treated by an emulsification treatment" as featured in the present invention. This document does not disclose nor suggest the above listed characterizing features.

Applicants' claims are not anticipated by the applied references. The present invention uses as a starting material "a processed cheese or cheese food which has been previously treated by an emulsification treatment". In contrast, both JP9154485 and JP9103242 use as a starting material, a natural cheese which has not been subjected to an emulsification treatment.

JP58198248 discloses a method of making cheese cake using a cheese as a starting material. However, it does not disclose production of a processed cheese or cheese food, much less a raw material to be used for producing a processed cheese or cheese food. Thus, the invention claimed in the present application is not disclosed in JP9154485, JP9103242 or JP58198248, and applicants' claims are novel over these references.

Applicants' claims define patentable (non-obvious) subject matter. A characteristic of the present invention, to convert "a processed cheese or cheese food which has been previously treated by an emulsification treatment" to a raw material to be reused, which is neither disclosed nor suggested in JP9154485, JP9103242 or JP58198248.

Applicants have unexpectedly found even if a processed cheese or cheese food which has been previously treated by an emulsification treatment is used as one of the raw materials for another processed cheese or cheese food, it produces no substantial viscosity increase in the course of an emulsifying treatment in a later step. This result is not disclosed in nor suggested by JP9154485, JP9103242 or JP58198248.

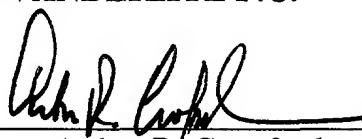
For the reasons described above, the present invention renders "processed cheese or cheese food which has been previously treated by emulsification" mixable with at least one other raw material to produce another processed cheese or cheese food -- it is an extremely important advance. The present invention makes it possible to reuse a pre-cooked cheese in a processed cheese or cheese food producing plant, to increase yield, and to operate the plant under stable conditions.

Reconsideration and favorable action are solicited.

Respectfully submitted,

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